

1976-77
Second
Annual
Report
of the
Australian
Bureau of
Statistics

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Second Annual Report of the Australian Bureau of Statistics

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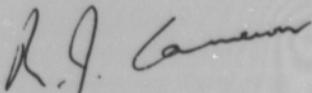
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The Honourable Phillip Lynch, M.P.
Treasurer of the Commonwealth of Australia

In accordance with the provisions of section 24 (1) of the
Australian Bureau of Statistics Act 1975, I hereby submit to
you, for presentation to Parliament, this Report for the year
ended 30 June 1977.



R. J. CAMERON
Australian Statistician

19 August 1977

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Note: In this Report, after the first reference, the Australian Bureau of Statistics is referred to as the ABS and the Australian Statistician as the Statistician.

1. Introduction

This is the second annual report by the Australian Statistician on the operations of the Australian Bureau of Statistics, formerly the Commonwealth Bureau of Census and Statistics.

The principal legislation determining the functions and responsibilities of the ABS is as follows:

- *Australian Bureau of Statistics Act 1975*
- *Statistics (Arrangements with States) Act 1956*
- *Census and Statistics Act 1905*

The *Census and Statistics Act 1905* was amended in 1977 to make it mandatory for the ABS to hold a population census every five years, commencing in 1981, and for the Statistician to compile and tabulate 'statistics of the number of people of each State as on the last day of March, June, September and December in each year'.

The ABS has benefited this year from the deliberations of the Australian Statistics Advisory Council, whose activities are outlined in the Council's first Annual Report. Mr R. J. Cameron was appointed as Australian Statistician from 7 March 1977 for a period of 7 years.

Mr D. V. Youngman, First Assistant Statistician, Economic Censuses and Surveys Division, acted as Australian Statistician from 7 December 1976 to 4 March 1977.

Mr R. W. Cole, the first Australian Statistician, resigned on 7 December 1976 to take up the newly created office of Secretary of the Department of Finance.

2. The Collection of Information

The ABS is the central statistical authority for the Commonwealth Government and, under agreements between the Commonwealth and the States, provides statistical services for the six State Governments. A wide range of statistics is required to assist in the formulation and monitoring of policies of many kinds; for example, general financial and economic policies, policies relating to particular industries or to particular localities, and policies relating to the provision of social security, education, medical and welfare services. In addition, businesses, industry associations, trade unions, other non-governmental bodies and a large number of individual inquirers ask for figures to assist in planning their activities, in carrying out their various functions and in following up particular interests.

To provide these statistics, the ABS must collect information from businesses and households, and has powers under the relevant legislation to require that information be provided to it. The ABS is very conscious of the reporting burden on businesses and households, which are likely to receive requests to provide information, not only from the ABS but also for administrative and other purposes from Commonwealth departments and authorities and State and local government bodies. In addition, approaches may be received from trade associations, market research organisations, surveys undertaken as part of academic research and so on.

So far as its own requests to the public are concerned, the ABS tries to limit them to an extent compatible with its responsibility to provide users with estimates sufficiently reliable to meet the purposes for which the collection is intended.

With the notable exception of the population census, information from households is sought only from a small sample of households and usually by personal interview rather than the completion of questionnaires sent by mail. Requests to businesses to provide information are more extensive, but wherever possible information is sought only from a sample of businesses and inquiries are directed to a far smaller proportion of small than of large businesses. In some instances less detailed information is sought from small than from large businesses. Respondents in continuous sample surveys are, where possible, rotated out of the surveys after a period.

A good deal of effort goes into the design of statistical questionnaires to make them readily understandable and to seek information that, so far as is possible, will be available from existing business records. Consultations for this purpose are held with respondents and relevant industry associations, and pilot tests of new or revised collections are undertaken to ensure that questionnaire design is appropriate and effective.

Assistance is always available from ABS officers to those experiencing difficulties in completing statistical questionnaires. If the information sought is not readily available in respondents' records, ways of obtaining reasonable estimates are explored or in some cases different accounting periods can be substituted.

The continuing co-operation of respondents in providing accurate and timely data is essential if the ABS is to be able to fulfil its statistical responsibilities to governments, businesses and the community generally. Efforts are made by ABS officers to explain to respondents the reasons for collections being undertaken and the purposes to which the resulting statistics are put.

It is, however, not possible to place collections for statistical purposes on a voluntary basis, because the reduced number of respondents would not be representative of the total group in respect of whom figures are needed. Collections on a voluntary basis would yield figures with reliability too low to be acceptable for statistical purposes. In some of the surveys undertaken by the ABS where a lesser degree of reliability is acceptable, or qualitative information is sought, answers to questions are not made compulsory.

(a) New collections

Each year the ABS receives many proposals for new or more detailed statistics. These are explored to see whether existing data, from the ABS or other sources, could meet the purpose in mind. If not, the additional resources which the ABS would need to make a new collection and the extent of the additional reporting burden on respondents are investigated. Before a decision is taken these are weighed against the priority attached to the proposal.

During 1976-77 the following proposals for the collection of information for statistical purposes were laid before both Houses of Parliament in accordance with section 6 (3) of the *Australian Bureau of Statistics Act 1975*.

- Information on fertility and birth expectations, the work week, trade union membership and the use of data from the ABS. Tabled on 7 September 1976.
- Quarterly statistics of sales and orders from manufacturing enterprises. Tabled on 14 and 15 September 1976.

- An annual collection of accounting aggregates from permanent building societies and credit unions. Tabled on 10 and 11 November 1976.
- Information on alcohol and tobacco consumption. Tabled on 30 November 1976.
- Information on interest, rent, royalties and dividends for the year 1975-76. Tabled on 30 March 1977.
- A national Health Interview Survey for 1977-78. Tabled on 25 and 26 May 1977.
- An annual collection of accounting aggregates from terminating building societies. Tabled on 2 and 3 June 1977.

(b) Review of current collections

In order to economise on ABS resources, to lessen the burden on respondents and to make way for new collections, the ABS continually examines the content and scope of current collections, with a view to amending, terminating or reducing the frequency of those no longer warranting high priority.

Over the past year the ABS has ceased the monthly survey of aggregate import orders, reduced the program of studies of foreign ownership and control, excluded unlisted companies from capital raising statistics, and decided to reduce the size of the sample for the agricultural finance survey and change it from a mail collection to a field interview collection to ease respondent problems.

There have been reductions in the frequency of the A.C.T. and N.T. retail censuses and in the collection of data on production of some manufacturing commodities, and materials used by manufacturing establishments.

The annual census of manufacturing enterprises now seeks only limited information from enterprises with only one establishment and employing less than four persons. These small businesses are also excluded from the monthly and quarterly surveys of manufacturing production. Similar provisions will apply to future censuses of other sectors covered by the integrated economic censuses.

Other examples of reduced informant burden during the year include a reduction in the number of data items collected in the agricultural census and the removal of some small units from its scope. In addition there has been a substantial reduction in the sample size of the survey of earnings and hours conducted annually in May.

As a result of these reviews and of reviews of particular areas of activity, some of them undertaken in conjunction with the Public Service Board, substantial reductions were made in numbers of staff engaged on particular projects and on administration. Nevertheless resources were not available to undertake all worthwhile proposals which were recommended to the ABS during the year.

3. The Statistical Output of the ABS

This section outlines the principal statistics compiled by the ABS and describes the more important developments which occurred during 1976-77.

(a) National accounts

The national accounts published by the ABS present, in a systematic and comprehensive way, the economic transactions that take place in the Australian economy

and those between Australia and the rest of the world. The accounts are basically in accordance with the United Nations System of National Accounts.

Because the accounts necessarily draw on virtually all available sources of quantitative economic data, they impose considerable demands in terms of definitions, coverage and classification on the various statistical collections by the ABS. They require data on establishments and commodities for analysis of production, consumption and capital formation; and data on enterprises for the preparation of income and outlay and capital accounts.

Because of the comprehensive coverage of the accounts and the need to publish soon after the end of each quarter estimates at current and constant prices, making allowance for normal quarterly fluctuations, they represent perhaps the most difficult estimating task attempted by the ABS. Much of the information needed for such estimates does not become available until long after the event and then not in a form directly suitable for national accounting purposes, particularly on a quarterly basis. It is, therefore, inevitable that considerable uncertainty attaches to the figures when first published and that successive revisions to the estimates have to be made as additional information comes to hand.

Annual indexes of manufacturing production for the period 1968-69 to 1973-74, classified according to the Australian Standard Industrial Classification were published during the year, as were seasonally adjusted series for household disposable income and its components. Work continued on input-output tables in respect of the year 1974-75.

Closely related to the national accounts is work on finance and taxation statistics. Figures are produced for the Commonwealth, State and local government sectors classifying outlays on the various purposes of government (e.g. defence, education, health, etc.) and how the total outlay for each tier of government is financed. The transactions of past periods and, to a limited extent, budget estimates are classified and consolidated so that their economic impact can be analysed within the national accounting framework. Statistics relating to individual local government authorities are published by State Offices of the ABS and selected statistics for local government authorities are available from an Australia-wide system known as the Australian Municipal Information System. Statistics from this system can be made available on paper, microfiche, or magnetic tape.

A conceptual framework is now being developed within which both structural and operational data on financial institutions can be compiled and analysed. Two new collections relating to assets, liabilities, income and expenditure of permanent building societies and credit unions were launched in 1976-77 on this conceptual basis, and it is anticipated that similar data relating to finance companies, insurance companies and banks will be developed shortly. A conceptually consistent collection on housing finance for owner occupation marks the first step on the activity side.

Statistics derived from the assessment of taxes administered by the Australian Taxation Office provide significant economic and social data as well as a quantitative description of the operation of taxation legislation and a basis for estimating future tax yields. The statistics to be produced each year are determined jointly by the ABS and the Australian Taxation Office and are published by the Commissioner of Taxation in *Taxation Statistics*, a supplement to the Commissioner's Annual Report. The ABS uses income tax statistics for annual estimates of the income and depreciation of companies and non-farm unincorporated enterprises in preparing the Australian national accounts.

As part of its program of ongoing work, the ABS is participating with other government authorities in the development of two econometric models. The Industries Assistance Commission and a number of other departments are jointly developing a medium term model of the Australian economy. This work, known as the IMPACT project, has as its aim the development of an analytic tool capable of looking five to seven years forward to support policy analysis in fields such as import protection and labour force policies.

Also, the ABS and the Treasury have jointly developed a short term model, known as the National Income Forecasting Model, which is used to develop conditional quarterly forecasts of major national accounting aggregates. The ABS role is econometric and statistical support, maintenance of the data base and computer systems and, in conjunction with the Treasury, development of the model to improve its performance and take account of institutional changes in the economy.

(b) International transactions

Statistics produced by the ABS relating to international transactions include the balance of payments, overseas trade and shipping, overseas investment and foreign participation.

Statistics of Australia's overseas trade are produced in great detail to meet requests from Government bodies, importers and manufacturers. It would not be practicable to publish all of it and a small charge is made for certain special compilations made available to users on a regular basis.

Developments in international transaction statistics during 1976-77 included:

- Surveys of Overseas Borrowing by Companies in Australia and Overseas Investment were integrated into a single survey from the September Quarter 1976, enhancing the value of the statistics and reducing the reporting burden on respondents.
- A survey was undertaken of consultancy services provided overseas in 1975-76.
- Statistics were published of foreign participation in the manufacturing industry 1972-73, the mining industry 1973-74 and 1974-75, and accredited advertising agencies 1974-75. Studies of foreign participation were commenced in the fields of finance, insurance, and mineral and petroleum exploration.
- Work commenced on reviewing import and export commodity classifications to accord with the revised Standard International Trade Classification.

(c) Price indexes

Wholesale price indexes are published each month in respect of:

- Exports
- Articles produced by manufacturing industries
- Materials used in manufacturing industries
- Electrical installation materials
- Materials used in house building
- Materials used in building other than house building
- Metallic minerals

The price indexes relating to articles produced by manufacturing industry were published for the first time in October 1976. The intention is eventually to provide a comprehensive range of price indexes of materials used and articles produced by important sectors of the economy.

The Consumer Price Index (CPI) is a series of short term retail price indexes linked to form one continuous series; the eighth link, introducing the ninth series, was made as at September Quarter 1976.

The current weighting pattern for the CPI is based on estimates of household expenditure for the year 1974-75 derived mainly from the Household Expenditure Survey conducted by the ABS. The use of the Household Expenditure Survey as the main information source has enabled the CPI to be related more specifically to a defined 'target group' of the population and to have separate weighting patterns for each of the seven capital cities for which index numbers are compiled. It has also been possible to expand the range of goods and services represented in the CPI.

(d) Economic censuses and surveys

The largest single component of the output of economic statistics produced by the ABS is derived from the integrated economic censuses and surveys, which have been strongly influenced by the need to view them as major contributors to the system of national accounts and input-output tables. This is especially true of censuses and surveys which deal with the production and consumption of goods and services and associated capital formation. They are also designed to provide detailed information on industry structure and facilitate valid comparisons across geographical areas and over subject characteristics. The censuses provide the basis for sample surveys which yield more frequent economic indicators.

The integration of economic censuses dates from 1969, when the censuses of wholesale and retail trade industries and some selected service industries were conducted for the first time on an integrated basis with censuses of mining, manufacturing, and electricity and gas production. The essential elements of an integrated system include the use of standard concepts, definitions and classification of data items and statistical units, and a central integrated register of businesses to be used for each of the censuses and surveys to avoid duplication, gaps and inconsistent classification.

The ABS strategy for maintaining and extending the integrated census program is to repeat manufacturing and mining industry censuses annually and other censuses quinquennially, plus the annual agricultural census mainly concerned with agricultural commodities. It is planned to conduct a census of the construction industry in respect of the year 1978-79.

The annual censuses of the agricultural and manufacturing industries require a substantial number of ABS staff and the cost of these collections has to be weighed against the needs expressed to the ABS for finely classified detail by commodity and region.

Regular surveys undertaken each quarter on an integrated basis include the Survey of Capital Expenditure and the Survey of Stocks, which was expanded in 1976-77 to seek information from manufacturers on their sales of goods and unfilled orders. These surveys are important elements in the quarterly national accounts estimates and give an indication of business intentions. Other surveys conducted from time to time in this framework, such as the Survey of Rent, Interest, Royalties and Dividends, provide information for estimating elements of the annual national accounts which are not adequately covered by the censuses.

Statistics relating to the construction, transport and other service industries are not yet part of the integrated system and it is hoped eventually to put them onto an integrated basis, or at least make them as compatible as possible, in the interests of increasing their value to users and reducing costs of collection. Especially in construction and transport statistics, progress is dependent on the conduct of censuses of these sectors to provide the necessary benchmark data on value added, sales and purchases and appropriate commodity detail, as well as consistent estimates of employment and wages.

Developments during the year included:

- Redesign of the economic census processing system. This is now at the point where modules of the new operating system, using the new technology of data dictionaries, disc-based files and remote on-line access, are coming into operation for the 1976-77 mining and manufacturing industry census dispatch and collection control operation. The full system should be operating for the 1977-78 censuses in these industries and for the 1978-79 census of the construction industry. Advantages expected from the new system are a substantial improvement in the timeliness of census results and much improved capability to produce supplementary tabulations and analyses for particular needs.
- First results were released of a major redevelopment of agricultural finance statistics, designed to achieve greater compatibility with statistics of other sectors and, in particular, substantially upgraded information on the structure and financial operations of the agricultural industry.
- Collection of quarterly statistics of sales of goods manufactured and unfilled orders has commenced but has not yet reached publication stage.
- A further survey of motor vehicle usage was undertaken.
- Development continued of an Australian Standard Commodity Classification, designed in the first instance to increase compatibility between overseas trade and commodity production statistics.
- Preparations were made for a survey of research and development expenditure and activity in the business sector for the year 1976-77, requested by the Department of Science.
- The frequency of the Construction (Other than Building) collection was changed from six monthly to quarterly.

(e) Social and demographic statistics

During 1976-77 data from the 1976 Census of Population and Housing classified by age, sex, marital status and birthplace, was published for collection districts, local government areas, federal electoral divisions and States. For budgetary reasons the Government decided that the processing of more detailed information from the Census would be deferred until July 1977 and subsequently that it would be undertaken on a sample basis. Information for each alternate private dwelling within each collection district will be processed. All the information will be processed for non-private dwellings (institutions, hotels and the like), and for all dwellings in the Northern Territory (because of the special conditions obtaining there). It is anticipated that the first data from this stage of processing will be released about the end of February 1978.

It is not considered that the use of sampling methods will materially impair most practical uses of the data, or their comparability with the results of previous censuses.

Estimates of possible sampling errors will, of course, be included in the relevant census publications. In considering the importance of these sampling errors, it needs to be borne in mind that figures that would have resulted from a complete processing of all returns would in any case have been subject to errors and uncertainties arising from mistakes made by those completing schedules, inability to obtain a complete response in respect of every person and household, and other non-sampling errors.

Even in respect of the total population as enumerated in the Census, a detailed survey of a sample of households conducted shortly after 30 June 1976 established that numbers had been significantly underestimated. It was therefore decided to adjust the enumerated population figures in each State and Territory, in order to provide a better estimate of the population.

Methods are being devised to make similar adjustments to population estimates for local government areas. Revision of population estimates relating to earlier dates, at which there is also thought to have been underenumeration, is under consideration.

Preliminary planning for the 1981 Census is now being commenced and a series of tests will be undertaken to evaluate new procedures and methods, including the use of a machine-readable schedule to be completed by householders, the development of a new field collection system and the feasibility of coding data for geographic areas smaller than existing collection districts.

Other developments during 1976-77 were:

- Projections of the population of Australia, 1977-2001, were published in November 1976 and will be followed by projections of State populations.
- Australian Life Tables 1970-72 for males and females derived from the 1971 Census and compiled by the Australian Government Actuary were published in October 1976. They are the tenth in the series of Life Tables for Australia.
- A sample survey of the fertility history and birth expectations of married women was undertaken. The resultant statistics will be cross-classified with the characteristics of the mother, such as age, birthplace and whether she was in the workforce at the time of the survey.
- Two bulletins containing results from the 1974-75 Household Expenditure Survey were released. It is intended to complete publication of the full series of eight bulletins by the end of 1977. Additional tabulations of data were prepared in response to requests from users.
- First results from the 1975-76 Household Expenditure Survey were published in July 1977 and a further four bulletins are planned during 1977-78.
- A National Health Interview Survey, to commence in July 1977, was developed to provide basic data for 1977-78 on the health of the population. It is designed for use by Commonwealth, State, and other health authorities in the planning of new facilities and services, and measuring the use of existing facilities. Preliminary results on a quarterly basis are expected to be available early in 1978.
- The first issue of 'Social Indicators' was published in 1976 and further work is to be undertaken to develop social indicators in areas of social concern.

(f) Manpower statistics

Estimates of the number of civilian wage and salary earners are calculated monthly using information obtained mainly from payroll tax returns and returns from government bodies.

Details of the labour force and its components are derived from quarterly labour force surveys and from special surveys carried out as supplements to the labour force surveys. These surveys are carried out by personal interview at a sample of dwellings throughout Australia in February, May, August and November each year. They provide a wide range of information that is not generally obtainable from other sources about the numbers and characteristics of employed persons, the unemployed and persons not in the labour force. Other information collected in the course of surveys during 1976-77 was as follows:

Labour force topics (also covered in earlier surveys) were:

- job tenure
- frequency of pay
- distribution of weekly earnings of employees
- labour force experience
- persons looking for work
- discouraged job seekers and other persons not in the labour force.

New labour force topics surveyed were:

- work patterns of employees
- trade union membership
- evening and night work.

Other non labour force information collected included:

- internal migration
- child care
- fertility and birth expectations
- tobacco and alcohol consumption
- the use of ABS data.

Information on earnings and hours is obtained from three surveys: distribution of weekly earnings of employees, conducted in August as a supplement to the labour force survey; earnings and hours of employees, in October; and earnings and hours of employees, distribution and composition, in May. The last two are mail surveys of private and government employers. In addition, average weekly earnings per employed male unit, a series derived largely from payroll tax returns and direct information from government bodies, is compiled and published quarterly. Data on prescribed minimum wage rates are compiled in the form of weighted indexes and are released monthly.

Other developments during the year in the field of labour statistics were:

- A survey of persons registered as unemployed with the Commonwealth Employment Service was conducted in March 1977, at the request of the Government.
- A publication entitled *Migrants in the Labour Force 1972 to 1976* which contained estimates of overseas born persons in the Australian labour force was released in June 1977. In order to facilitate comparison, estimates of persons born in Australia were also included in the publication.
- A new quarterly survey of job vacancies was commenced in May 1977.
- Work advanced on the extension of the wage rates indexes to include salary earners as well as wages employees, and on the revision of the weights accorded to industries and occupations.

4. State Statistical Services

Under agreements between the Commonwealth and State Governments, the ABS has been responsible since 1958 for meeting the statistical needs of all State Governments. In broad terms, the ABS is responsible for providing statistical services of a like character to those which were provided previously by the former State Government Statistics Offices. In all States except Victoria, the Deputy Commonwealth Statistician in charge of the ABS State Office also occupies the position of State Government Statistician (or Statist).

The role of ABS State Offices is thus a dual one. In addition to contributing to the production and dissemination of the statistics outlined in the preceding section of this report, each State Office provides technical assistance and advice to State authorities concerning the undertaking of statistical activities and the use of statistics generally. Close liaison is maintained with State authorities on their statistical needs, the statistics already available and the undertaking of special purpose collections or analyses.

Along with an increase in activity of this kind has come a greater appreciation of the difficulty of assessing the relative priority to be accorded to the many statistical requests received from State authorities.

This has led to the creation by State Governments of statistical co-ordinating bodies. In each State except New South Wales, a committee has been set up comprising representatives of the State Government and the ABS. The functions of these committees, broadly speaking, are to identify and continually review statistical needs of State Government departments, establish priorities between the needs, and advise on the co-ordination and integration of the data collection activities of State agencies. In New South Wales a State Statistical Co-ordinating Unit has been established with these functions within the State Treasury.

ABS State Offices receive many statistical enquires from business organisations, academic institutions and the public; these have increased in number in recent years with the increasing awareness of the range of official statistics available from the ABS.

Some particular activities undertaken in State Offices during 1976-77 are outlined below.

The New South Wales, Queensland and South Australian Offices have been attempting to improve the statistics of financial operations of local government authorities. In New South Wales, the ABS is co-operating with the Department of Local Government to simplify and standardise the annual statements of accounts submitted by local councils, with a view to reducing the reporting burden on them and facilitating the speedier and more economical processing of this information for public finance and national accounts statistics. The Queensland and South Australian Offices have been assisting Committees set up by the respective State Governments to review local government accounting and information systems.

The Victorian Office assisted the Victorian Ministry of Transport in the conduct of a transport survey in Melbourne. The ABS designed the questionnaire, compiled the interviewer's instructions and undertook field testing in addition to advising the Ministry on sampling, standards and procedures. The Western Australian Office assisted a number of State authorities in the conduct of the Perth Region Travel Study.

The Tasmanian Office conducted an intensive investigation, including surveys of users and consideration of submissions by the Tasmanian Shipping Review Committee and others, of the existing statistics of Tasmanian interstate trade. Steps to remedy current deficiencies in the statistics are being undertaken.

Two new projects have been developed by the New South Wales Office to produce statistics on land development in Sydney and the average sale values of vacant land and residential dwellings.

Development work towards a uniform classification of criminal offences was undertaken by the South Australian Office.

The results of health care surveys undertaken in the Gosford-Wyong and Illawarra Health Regions of New South Wales in late 1975 were published jointly by the New South Wales Office and the New South Wales Health Commission in July 1976. The Australian Hospitals and Health Services Commission joined with the ABS and the Health Commission in funding the surveys which provided data on illness, functional limitations due to illness and the use of (and unmet needs for) health services. These surveys were also used to test procedures and questionnaires to be used in the National Health Interview Survey to be conducted Australia-wide in 1977-78.

5. Other Activities

In addition to the production of new or improved statistical series, scope had to be found within reduced staff numbers for two important developmental projects—data management and computer re-equipment. Both are major undertakings and require the immediate investment of highly skilled manpower if the ABS is to continue existing services, achieve potential gains in productivity and, at some future date, be able to meet more effectively the requests made to it by governments and the public.

(a) Data management

The Data Management Project is concerned with developing facilities, procedures and standards for the improved organisation of the ABS data resource, and with the processing and output functions performed on that resource.

Planning for computer re-equipment has meant greater emphasis in the Data Management Project over the past year on issues related to initial use of the new equipment, including:

- Planning for the orderly transition of computer processing systems to new equipment and for the phasing out of the ABS's existing computers.
- Specification of the standards and facilities which will be required in a suitable data processing environment to govern how the new equipment is to be used.
- Analysis of the data processing functions being undertaken in ABS statistical projects, as a basis for development of suitable program 'packages' which can be used in the construction of computer processing systems for use by a variety of statistical projects.
- Identification of characteristics relevant to the design and development of a system to gain access to data stored within the computer.
- Specification of the management controls which are to govern access to data and to facilities provided on the equipment.

(b) Computer re-equipment

The second major project is the introduction of new computer equipment. The ABS first acquired computers in 1964 and now operates thirteen medium to large computers and six smaller ones, located in Canberra and the State capitals. The intention is to replace all but two of the larger computers by a single installation and associated network. The reasons for replacement are the deteriorating condition and reliability, and escalating maintenance and operating costs of the present equipment, and the inability of present systems to cope effectively with existing and future workloads.

As well as servicing its own needs, the ABS currently provides a data processing service to a number of other government users. These users are progressively transferring their work to their own installations. However as part of the ABS re-equipment program and in accordance with government policies of rationalisation of computing facilities in the Public Service, the new installation will be used by the Department of Overseas Trade, enabling that Department in due course to discontinue use of a private service.

Evaluation of tenders received for new equipment, including visits to overseas suppliers and users of tendered facilities, has been a substantial undertaking during the year. In the period ahead the conversion of statistical systems from the old to the new equipment will make considerable demands on technical staff, who will also face the sizeable tasks of learning how to use the new equipment effectively and of disseminating this knowledge throughout the ABS.

(c) Statistical methodology

A major feature of official statistics since the end of World War II has been the development and increasing use of mathematical statistics. In the ABS, small specialised units have been established to provide sampling, time series analysis and other mathematical statistical services. Techniques have been developed for obtaining more accurate estimates of small area statistics, for greater use of time-series data to improve estimates for current surveys and for analysis of sample survey data. Investigations have been undertaken into sample selection techniques for spreading the response burden more uniformly across small businesses, and improving the efficiency of sample design and estimation procedures for existing ABS collections. Services of a similar nature are provided on request to other bodies.

(d) Dissemination of statistics

In 1976-77 the ABS published 617 monthly, quarterly or annual titles, in a total of 1822 issues. These ranged from single-sheet publications to volumes such as the *Year Book of Australia*.

PUBLICATIONS ISSUED DURING 1976-77

Frequency	Number of Titles							Number of Issues
	Canberra	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	
Annual	134	29	30	67	32	49	32	373
Quarterly	44	5	7	8	4	7	4	316
Monthly	53	9	6	6	3	6	5	88
Other	37	12	5	7	5	7	4	77
Total	268	55	48	88	44	69	45	617
								1822

The *Catalogue of Publications 1977* gives a complete list of all ABS publications, both priced and no charge. It also provides a concise description of the content of publications produced by the Canberra Office, and a comprehensive index of items covered in Canberra Office publications. It is available free on request from all ABS offices.

In addition, to meet the special needs of users the ABS provides non published tabulations using, where appropriate, computer printout, microfiche and magnetic tape.

(e) Co-ordination

Under section 5 (1) of the ABS Act 1975, two ABS functions are to co-ordinate statistical operations undertaken by Commonwealth Government departments and authorities, and to formulate standards for such work. Regular contacts are maintained between the ABS and other authorities, at the level appropriate to the particular topic, in order to discuss statistical needs, possible new collections and the review of existing collections.

Because of the needs of certain departments and authorities, the ABS outposts officers to them for extended periods. These officers have the role of co-ordinating statistical operations between those bodies and the ABS, ensuring the observance of statistical standards and encouraging an integrated approach to statistical development. In some instances they assist in providing an internal statistical service for the body. Currently the ABS has outposted officers in sixteen departments and authorities.

(f) International contacts

The ABS participates in the statistical work undertaken by the major international organisations; it maintains contact with overseas statistical bureaux; and it assists and advises in the development of statistics in countries in the nearby region.

In the past, officers of the ABS have played an active role in regional organisations and associations such as the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP). During 1976-77 a senior officer attended the Second Session of the Committee on Statistics, which has the function of advising the Commission on all aspects of statistical operations, development and training in the ESCAP region. Another senior officer attended a working party convened by the United Nations Statistical Office and ESCAP to develop recommendations for the taking of censuses of population and housing in the region.

During 1976-77 ABS officers occupied senior positions in the Statistical Institute for Asia and the Pacific; the South Pacific Commission; the United Nations Development and Advisory Team for the Pacific; the Central Bank in Afghanistan; the Papua New Guinea Bureau of Statistics; the International Labour Office Project Team in Malawi; and the International Bauxite Association in Jamaica.

Several trainees from overseas statistical agencies visited the ABS during the year, under the auspices of the Colombo Plan and ESCAP fellowships, for on-the-job training in statistical development, collection and processing procedures.

The ABS maintains close association on a wide range of common interests with the Department of Statistics in New Zealand and with Statistics Canada. An exchange of a senior officer with Statistics Canada came to the end of the agreed two-year term in July 1977.

6. Organisation, Staffing and Finance

(a) Organisation of the ABS

The ABS has offices located in Canberra, the six State capital cities and in Darwin. The present organisation of the Canberra Office and the officers heading the various units are as follows:

Division	Branch
– Economic Accounts P. N. Atcherley	<i>National Accounts</i> D. W. Anderson
	<i>Finance and Prices</i> L. C. Clements
	<i>International Accounts</i> A. W. Roche
– Demography, Social and Manpower F. B. Horner	<i>Demography and Social</i> M. D. Giles
	<i>Manpower</i> G. I. Neville
	<i>Population Census</i> K. S. Watson
– Economic Censuses and Surveys D. V. Youngman	<i>Production and Distribution</i> T. R. Jones
	<i>Rural, Transport and Construction</i> F. D. Bagley
	<i>Classification, Integration and Enterprise</i> Statistics
	R. W. Fergie
– Statistical Applications and Services E. K. Foreman	<i>Statistical Services</i> J. E. Dulley
	<i>Statistical Applications</i> D. C. Leaver
	<i>Foreign Trade</i> A. J. Whittington
– Computer Services A. A. Taylor	<i>Systems Development</i> E. W. Miller
	<i>Technical Systems and Production</i> T. R. Goynich
– Co-ordination and Management A. R. Bagnall	<i>Management Services</i> P. G. Howell
	<i>Co-ordination</i> W. McLennan
	<i>Data Management</i> F. J. von Reibnitz

The offices in State capitals and in Darwin are headed by:

Sydney	D. W. Maitland
Melbourne	N. Bowden
Brisbane	O. M. May
Adelaide	B. E. Leonard
Perth	W. M. Bartlett
Hobart	R. Lakin
Darwin	W. Mitchell

(b) Staffing

In accordance with Government policy on staff ceilings, the number of staff employed by the ABS has declined over the past two years. A further reduction is to be achieved during 1977-78. Staff numbers and their distribution over the various offices of the ABS are given in the following table, which excludes field agents hired outside the Public Service Act. The processing of certain annual collections results in a seasonal peak in staff numbers in April to June each year.

TOTAL ABS STAFF

OFFICE		30 June 1975	30 June 1976	30 June 1977
Canberra	...	1735	1696	1651
Sydney	...	600	561	516
Melbourne	...	517	482	465
Brisbane	...	372	372	335
Adelaide	...	277	267	263
Perth	...	242	244	241
Hobart	...	150	142	133
Darwin	...	8	15	13
Census Processing Centre (Sydney)	...	...	...	61
TOTAL	...	3901	3779	3678

Appendix 1 shows the distribution of operative staff over the broad programs of statistical work undertaken by the ABS as at 30 June 1977.

(c) Finance

ABS expenditure in 1976-77 was \$57.8 million, a high proportion of which was on wages and salaries and payments to field agents involved in the collection of the schedules for the 1976 Census of Population and Housing.

ABS expenditure has increased over the past decade at about the same rate as total expenditure from the Commonwealth Budget, which has reflected increases in prices and costs and an expansion of Commonwealth concerns, in themselves a factor in the increased demand for statistics.

COMMONWEALTH EXPENDITURE

YEAR	ABS (\$m)	Total (\$m)	ABS as
			percentage of
			Total (%)
1967-68	16.0	6 225	0.26
1968-69	15.2	6 613	0.23
1969-70	17.6	7 348	0.24
1970-71	20.6	8 103	0.25
1971-72	27.8(a)	9 047	0.31(a)
1972-73	26.3	10 190	0.26
1973-74	30.7	12 229	0.25
1974-75	39.6	17 840	0.22
1975-76	47.0	21 859	0.22
1976-77	57.8(b)	24 124	0.24(b)

(a) Collection and processing of 1971 Population Census schedules.

(b) Collection and initial processing of 1976 Population Census schedules.

In accordance with Government policy, the ABS does not charge departments and authorities for most services provided to them. Receipts during 1976-77 totalled approximately \$480 000 and came mainly from the sale of publications, special compilations of overseas trade statistics and the recovery of costs associated with computer services provided by the ABS to the Tasmanian Government. Policy on the distribution of, and charging for, publications is in the course of being reviewed. Detailed statements of ABS expenditure and receipts for 1975-76 and 1976-77, and estimates for 1977-78, are shown in Appendix 2.

APPENDIX 1

DISTRIBUTION OF FULL-TIME OPERATIVE STAFF(a) AT 30 JUNE 1977

PROGRAM AND COMPONENT AREAS OF STATISTICAL OR REPORTING ACTIVITIES	Central Office	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	TOTAL
ECONOMIC ACCOUNTS National accounts, public and private finance, prices, quantum indexes, balance of payments, overseas investment and foreign participation	227	26	23	21	10	11	6	..	324
FOREIGN TRADE Overseas trade and shipping, import orders	91	3	3	2	1	1	..	..	101
ECONOMIC CENSUSES AND SURVEYS Statistics of commodity produc- tion and other operations in agriculture, mining, manufac- turing, construction, trade and transport industries; surveys of capital expenditure; development and maintenance of standard industry and commodity classifi- cations and of a comprehensive register of businesses for use in producing integrated economic statistics	209	202	176	114	84	77	29	5	896
POPULATION AND HOUSING CENSUS Organising the 5-yearly Census, population counts, and servicing the needs of users of census data. Processing of 1976 Population and Housing Census	52	2	5	1	4	..	1	..	65
	61	..	..	..	..	..	..	..	61
DEMOGRAPHY AND SOCIAL Population estimates and analysis, vital statistics, migration, mor- tality, health and welfare, educa- tion, justice, social indicators and household income and expen- diture surveys	82	39	29	30	17	14	12	2	225
MANPOWER Employment and unemployment, other labour force characteristics, earnings, wage rates, working hours, industrial accidents and compensation, industrial disputes and trade unions	7	35	24	18	16	10	5	..	183

(a) Excludes staff on long service leave, maternity leave, extended sick leave, etc.

PROGRAM AND COMPONENT AREAS OF STATISTICAL OR SUPPORTING ACTIVITIES	Central Office	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	TOTAL
POPULATION SURVEYS Development and operation of labour force surveys and other field surveys of various characteristics of the population . . .	25	23	19	18	16	14	6	3	144
STATISTICAL SERVICES Specialist services in statistical methodology, including sampling, statistical analysis, seasonal adjustment and other time series analysis. Statistical service specifically for the needs of State Government and other official organisations . . .	74	5	17	14	12	23	13	1	159
MANAGEMENT SERVICES Personnel, staff development and training, financial administration, general office services, establishments, methods and internal audit	246	69	62	34	35	26	13	1	486
INFORMATION SERVICES Publication of ABS statistics and provision to users of a statistical information service . . .	43	7	7	10	12	7	4	1	91
COMPUTER SERVICES Computer systems development and maintenance, data capture, software systems, computer operations, production processing, ADP technical planning and information, ADP standards, ADP training, computer service bureau facilities for other government departments . . .	400	89	74	57	42	45	39	..	746
SECRETARIAT Liaison with Parliament, Minister government departments, international and national statistical agencies; servicing the Australian Statistics Advisory Council, the Conference of Australian Statisticians and other ABS committees; and legislative matters. The Outposted Statistical Service . . .	7 27	..	..	1	1	..	..	..	8 29
DATA MANAGEMENT Development of policies on the management and organisation of statistical data . . .	9	..	..	..	..	..	..	..	9
TOTAL FULL-TIME OPERATIVE STAFF . . .	1 628	500	439	320	251	228	128	13	3 577

APPENDIX 2

STATEMENT OF EXPENDITURE AND RECEIPTS FOR 1975-76, 1976-77 AND ESTIMATES FOR 1977-78

EXPENDITURE

Item		Actual 1975-76	Actual 1976-77	Estimate 1977-78
Item 1 Salaries	.. ..	\$ 35 463 977	\$ 40 104 776	(a) \$ 47 694 000
2 Overtime	.. ..	227 676	282 198	340 000
Total Division 1	.. ..	35 691 653	40 386 974	48 034 000
Item 1 Travel and Subsistence	.. ..	484 089	521 705	624 000
2 Office Requisites	.. ..	2 280 765	1 511 419	1 659 000
3 Postage and Telephones	.. ..	2 026 308	2 279 102	2 458 200
4 Office Services	.. ..	245 514	286 491	340 800
5 Publications	.. ..	1 199 247	1 064 880	1 491 000
6 Computer Services	.. ..	2 141 892	3 045 344	3 196 000
7 Payment to Agents	.. ..	1 678 476	(b) 7 864 584	1 555 900
8 Freight and Cartage	.. ..	510 091	265 370	171 800
9 Consultants	.. ..	13 348	18 451	(c)
10 Incidentals	.. ..	181 645	206 663	242 400
Total Division 2	.. ..	10 761 375	17 064 009	11 739 100
Total Division 1 and 2	.. ..	46 453 028	57 450 983	59 773 100
Special Appropriation—				
Payment of Australian Statistician, Chair- man of ASAC, etc.	.. ..	(d)	33 977	47 500
Capital Works	.. ..	525 337	274 339	288 000
Total Expenditure	.. ..	46 978 365	57 759 299	60 108 600

(a) Includes provision of \$4 966 000 for payment of salaries of staff employed in processing data from the 1976 Census of Population and Housing.

(b) Includes \$6 619 000 for payment of Census Collectors for the 1976 Census of Population and Housing.

(c) Included in Item 6 Computer Services.

(d) Not applicable in 1975-76.

RECEIPTS

Type	Actual 1975-76	Actual 1976-77	Estimate 1977-78
Estimated proceeds from 'for sale' publications(a)	160 000	(b) 140 000	190 000
Proceeds from sale of special compilations of overseas trade statistics	99 576	118 233	120 000
Recovery of cost of use by Tasmanian Government of Hobart Computer	146 351	190 081	190 000
Recovery of costs of computer services for Papua New Guinea Government(c)	70 500	..	111 000
Miscellaneous receipts	73 744	29 455	30 000
TOTAL	550 171	477 769	641 500

(a) Including an estimate of sales through AGPS.

(b) No *Year Book of Australia* issued during 1976-77.

(c) This arrangement terminated on 30 June 1977. The estimated receipt for 1977-78 is in respect of work performed up to 30 June 1977.